Audit of Forest Practices and Planning
BC Timber Sales Program
100 Mile House Forest District

FPB/ARC/70

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Forest Practices Board Commentary

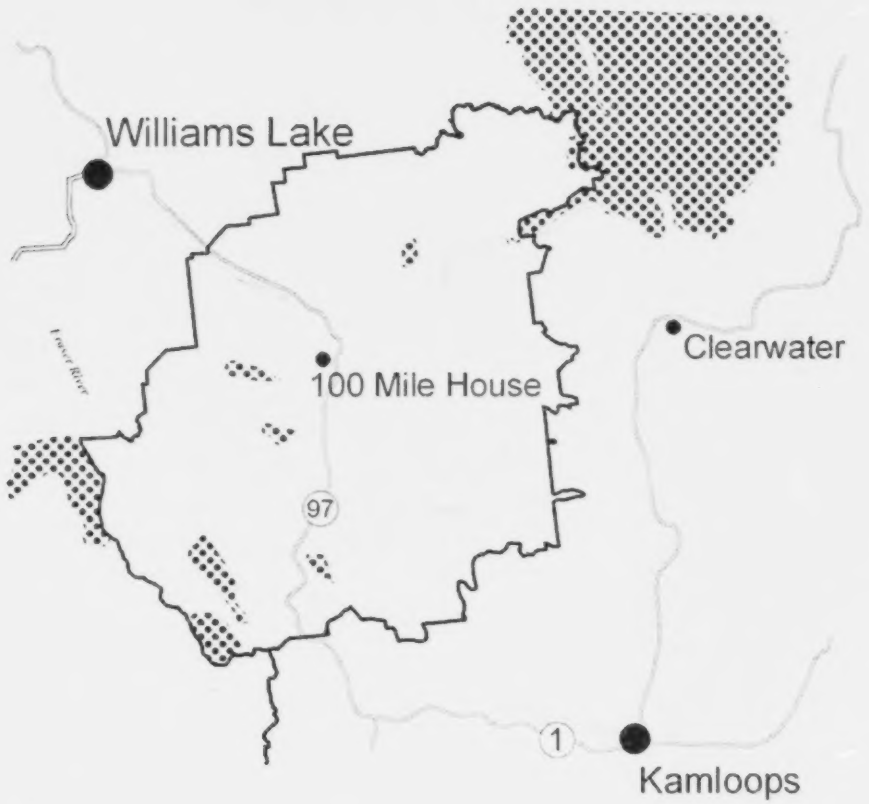
This is the Board's report on a compliance audit of the British Columbia Timber Sales (BCTS) Program in the 100 Mile House Forest District. BCTS's operating areas are scattered throughout the 100 Mile House Timber Supply Area. (See map on page 2.)

An unprecedented mountain pine beetle epidemic is occurring in the interior of the province, including the area audited. In response to this epidemic, BCTS is undertaking a variety of beetle management practices including baiting beetle-infested areas. Baiting involves attracting beetles into a stand of trees and then removing the trees to maximize the number of beetles destroyed.

The Board notes that planning and practices undertaken or administered by BCTS complied with legislative requirements in all significant respects. However, a large proportion of the baited area was not harvested as planned. While several factors contributed to the delay in harvesting, the Board believes that BCTS is ultimately responsible for managing those beetle infested areas. The failure to harvest the beetle infested areas was contrary to sound forest management and is a forest practice that requires improvement. The Board encourages BCTS to review its approach to beetle management in the district to assure that beetle management activities are planned, conducted and completed in a systematic and appropriate manner.

Bruce Fraser, PhD
Chair, Forest Practices Board

April 27, 2005



Highway

100 Mile House
Forest District Boundary

Provincial Park

(Map not to scale)

Enlarged
area

Detailed Audit Findings

Background

As part of the Forest Practices Board's 2004 compliance audit program, the British Columbia Timber Sales (BCTS) program in the 100 Mile House Forest District was selected for audit from the population of twelve BCTS business areas within the province. The 100 Mile House Forest District portion of the Kamloops business area was selected randomly and not on the basis of location or level of performance. For more information on the compliance auditing process, see Appendix 1.

The audit examined planning, activities and obligations undertaken or administered by BCTS[1]. BCTS operates within the 100 Mile House Timber Supply Area (TSA) in the 100 Mile House Forest District. The community of 100 Mile House, 90 kilometres south-east of Williams Lake, lies near the center of the district. BCTS operates throughout the district (see map). The terrain varies from dry grasslands in the west to wet mountains in the east. In the centre of the TSA, the land is elevated interior plateau, dotted with numerous lakes. Activities subject to audit were located primarily on the interior plateau and wetbelt areas.

BCTS's annual apportionment for timber harvesting was 171,000 cubic metres[2]. During the audit period from June 1, 2003, until June 20, 2004, BCTS harvested approximately 82,000 cubic metres using ground-based systems. About 23,000 cubic metres was to control mountain pine beetle and spruce beetle. Harvesting and road building activities generally occurred in areas with few risk features, such as streams or unstable terrain.

Higher Level Plans

The *Cariboo-Chilcotin Land Use Plan* (CCLUP) is applicable to BCTS's operations subject to audit. Parts of the CCLUP were declared a higher level plan[3] under the Forest Practices Code, requiring BCTS's operations to be consistent with those portions of the CCLUP. Other portions of the CCLUP provide operational guidance. The draft 100 Mile House Sub-Regional Plan provides further guidance on how to achieve the CCLUP objectives for resource values such as biodiversity, recreation and timber.

Audit Approach and Scope

The audit examined BCTS's program of planning, field activities and obligations in the areas of operational planning (including forest development plans[4], silviculture prescriptions[5] and site plans[6]); timber harvesting; road construction, maintenance and deactivation; silviculture; and fire protection. These activities were assessed for compliance with the *Forest Practices Code of British Columbia Act* and its regulations (the Code) and the *Forest and Range Practices Act* and its regulations (FRPA)[7]. All activities, planning and obligations for the period June 1, 2003, to June 20, 2004, were included in the scope of the audit.

The Board's audit reference manual, *Compliance Audit Reference Manual, Version 6.0, May 2003,* and the addendum to the manual for the 2004 audit season set out the standards and procedures that were used to carry out the audit.

Planning and Practices Examined

Activities during the audit period were approved under the 2003 forest development plan (FDP) and subsequent amendments. Selected roads and cutblocks were audited using ground-based procedures and assessments from the air using a helicopter.

During the audit period, BCTS harvested 31 cutblocks, plus an additional 17 small patches exempted from various planning requirements. The audit examined 11 of those cutblocks and two small patches.

BCTS constructed 39 kilometres of new road, maintained 460 kilometres of existing road, and deactivated 11 kilometres of road during the audit period. The audit examined 11 kilometres of new road construction, 100 kilometres of road maintenance, and 4 kilometres of road deactivation. The audit also examined 11 of the 25 bridges maintained by BCTS.

Timber Sale Licence A49175 block 1. Red trees in the surrounding stand have been killed by mountain pine beetle.

The audit examined free-growing obligations on 14 of the 51 openings where it was due. The audit examined brushing on 1 of 4 blocks and mechanical site preparation on 1 of 5 blocks.

The audit examined fire-preparedness plans but was unable to examine fire-preparedness activities as there were no active operations during the audit field work that could be assessed.

The audit assessed proposed development for consistency with CCLUP targets and objectives.

Findings

The audit found that planning and field activities undertaken or administered by BCTS complied in all significant respects with the requirements of the *Forest Practices Code of British Columbia Act* and related regulations and the *Forest and Range Practices Act* and related regulations. As stated above, the audit could not examine fire-fighting tools and equipment in the field.

Managing Forest Health

The province is experiencing an unprecedented mountain pine beetle epidemic that will impact the forest industry and resource communities for decades to come. For several years, mountain pine

beetle populations have been increasing in the 100 Mile House Forest District, and, along with spruce beetle concerns, have been driving the majority of BCTS's harvesting activities.

During the audit period, BCTS identified 634 hectares of beetle-infested areas for harvesting and baited all of those areas to concentrate insect broods before logging. However, approximately two-thirds (426 hectares) of those baited areas were not harvested before the 2004 beetle flights. The areas left unharvested were 84 hectares infested with spruce bark beetle and 342 hectares infested with mountain pine beetle. Of those 342 hectares, 61 also had increasing populations of Douglas-fir beetle and were in mule deer winter ranges. Altogether, the unlogged beetle-infested areas included an estimated 60,000 cubic metres of timber, representing over one-third of BCTS's annual harvesting apportionment.[8]

Subsequent to the audit period and prior to the 2004 beetle flight, the district manager exempted BCTS from the legislative obligation to destroy the insect brood from baited areas before the insects emerged (section 44(1) and 44(2) of the *Timber Harvesting and Silviculture Practices Regulation).*[9] The Board is of the view that this exemption also relieved BCTS of the legislative requirement to issue harvesting authorities and direct licensees to carry out timber harvesting in accordance with BCTS's operational plan commitments (section 67(1) of the *Forest Practices Code of British Columbia Act)* regarding timely harvesting of beetle-infested areas. Therefore, the audit found that BCTS complied with the legislative requirements for beetle management.

However, not harvesting beetle infested areas prior to the 2004 beetle flights was contrary to the best management practice to destroy insect brood from baited areas prior to it emerging[10]; the "control" (suppression)[11] and "holding"[12] mountain pine beetle management strategies in place at the time; as well as district guidance to promptly address forest health problems in mule deer winter ranges[13]. Therefore, the failure to harvest beetle infested areas was contrary to sound forest management.

Through the process of conducting the audit, it became apparent that several factors contributed to BCTS not issuing cutting authorities and directing harvesting of the beetle-infested areas as planned. For 61 hectares not harvested, BCTS was unable to enter data into the Ministry of Forests' new information system for tracking and selling approved cutblocks, which was not fully operational at the time. Consequently, the forest district did not process clearances for Exhibit A maps, required for BCTS to issue cutting authorities. For 365 hectares, the district manager policy required BCTS to allow First Nations to carry out archaeological impact assessments before the operational plans for the cutblocks were approved. However, the assessments were not completed until near or around the time of the 2004 beetle flights. Therefore these blocks were not sold and harvested prior to the beetle flight as originally planned.

Although BCTS is not directly responsible for the information system and archaeological assessments, it was BCTS's responsibility to ensure sound forest management of those beetle-infested areas. In this case, BCTS failed to ensure harvesting of 60,000 cubic metres of beetle-infested timber within the planned timeframes, and this is an area that requires improvement.

Audit Opinion

In my opinion, the operational planning; timber harvesting; silviculture; road construction, maintenance and deactivation; and fire protection planning activities carried out by BCTS for the period June 1, 2003, to June 20, 2004, complied in all significant respects with the requirements of the *Forest Practices Code of British Columbia Act* and related regulations and the *Forest and Range Practices Act* and related regulations as of June 2004. No opinion is provided on fire protection activities in the field because operations were inactive during the audit.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Without qualifying my opinion, I draw attention to the *Managing Forest Health* section that describes concerns with BCTS beetle management and a requirement for improvement.

The "Audit Approach and Scope" and the "Planning and Practices Examined" sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with the Code and FRPA.

C R Mosher

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April 2005

[1] BCTS issues timber sale licences and permits; develops operational plans; and conducts forest practices that are not subject to licences and permits (for example, forest health treatments other than harvesting; road construction, maintenance and deactivation; and silviculture activities). Timber sale licence holders fulfill licence, permit and operational plan obligations, including timber harvesting and road work where required by permit. The Ministry of Forests fulfils certain administrative and statutory functions, such as administering an information system for tracking and selling approved cutblocks, and preparing Exhibit A clearances and maps that BCTS requires to issue cutting authorities.

BCTS replaced the Ministry of Forest's Small Business Forest Enterprise Program (SBFEP) as of April 1, 2003. Some operational plans and work done towards fulfilling silviculture obligations were completed by the SBFEP. However, for ease of reading this report, activities, obligations and findings will be attributed to BCTS.

[2] Excluding some non-replaceable forest licences that were not part of the audit.

[3] A higher level plan is a forest resource management objective that is established as legally binding by a written order. The objective applies to a resource management zone, landscape unit, sensitive area, recreation site, recreation trail, or interpretive forest site. Higher level plans are a provision of the *Forest Practices Code of British Columbia Act* that give direction to operational plans.

[4] A forest development plan is an operational plan that provides the public and government agencies with information about the location of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect certain forest resources prescribed by regulation. It must also be consistent with any higher level plans. Site-specific plans are required to be consistent with the forest development plan.

[5] A silviculture prescription is a site-specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free-growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with forest development plans that encompass the area to which the prescription applies.

[6] A site plan is a site-specific plan that is required in place of a silviculture prescription as of December 17, 2002, except where there is already an existing silviculture prescription. The site plan contains many of the same elements as a silviculture prescription and is designed to identify resource values and define what a free-growing stand will be on that site. However, it is not an operational plan under the Code and does not require review or approval by government to be implemented.

[7] Most of the *Forest Practices Code of British Columbia Act* (the Code) was repealed on January 31, 2004, and replaced by the *Forest and Range Practices Act* (FRPA). The transitional provisions of FRPA say that the Code continues to apply to forest practices carried out under a forest development plan. This continues until there is an approved forest stewardship plan, at which point, the requirements of FRPA apply. Therefore, although FRPA came into effect during the audit period, the legislated forest practices requirements were the requirements of the Code.

[8] Excluding some non-replaceable forest licences that were not part of the audit.

[9] The requirement to destroy insect brood actually did not apply to BCTS, since it is not an agreement holder under the *Forest Act*. That gap in the Code appears unintentional and has since been addressed by FRPA. FRPA requires a timber sales manager to destroy insect brood in their baited areas before the insects emerge (section 41 of the *Forest Planning and Practices Regulation*, FPPR). FRPA came into effect over the course of the audit period, so the status of the requirement was in flux for the activities examined by this audit.

[10] *Bark Beetle Management Guidebook, 1995, page 26*

[11] The suppression strategy is selected when the infestation status is such that aggressive direct control actions are expected to keep an area at a low level of infestation. The intent of the strategy is to reduce the outbreak to a size and distribution that can be handled with normal resource capabilities. *Provincial Bark Beetle Management Technical Implementation Guidelines, Spring 2003, pp 6-7*

[12] The intent of a holding action strategy is to maintain an existing outbreak at a relatively static level. It is a delaying strategy until adequate resources are available or access created. *Provincial Bark Beetle Management Technical Implementation Guidelines, Spring 2003, p 7*

[13] *MPB Control and Timber Salvage in the Cariboo Forest Region, October 1999*

Appendix 1:
Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders for compliance with the *Forest Practices and Range Practices Act* (FRPA). The Board has the authority to conduct these periodic independent audits under section 122(1) of FRPA. Compliance audits examine forest planning and practices to determine whether or not they meet FRPA requirements.

Most of the *Forest Practices Code of British Columbia Act* (the Code) was repealed on January 31, 2004 and replaced with FRPA. The transitional provisions of FRPA state that the Code continues to apply to forest practices carried out under a forest development plan. This continues until there is an approved forest stewardship plan at which point the requirements of FRPA apply. Therefore, although FRPA came into effect during the audit period, the legislated forest practices requirements were the requirements of the Code.

The Board can undertake 'limited scope' or 'full scope' compliance audits. A 'limited scope' audit examines selected forest practices (e.g., road construction, maintenance and deactivation; timber harvesting; or silviculture) and the related operational planning activities. A 'full scope' audit examines all operational planning activities and forest practices.

The Board determines how many audits it will conduct in a year, and the type of audits (limited/full scope, or thematic), based on resources and other considerations. The Board audits agreement holders who have forest licences or other tenures under the *Forest Act* or the *Range Act*. The Board also audits government's British Columbia Timber Sales (BCTS) program, which is administered by Timber Sales Regional offices. Selection for audit, of both areas to be audited and agreement-holders and BCTS, is made randomly, using a computer program to ensure a fair, unbiased selection.

Increasingly, licensees are obtaining certification of their operational planning activities and forest practices under one or more certification programs[1]. Certification by these programs is generally intended to assure customers and markets that forests are being managed sustainably and in an environmentally sound manner, while Board audits are intended to assure the public landowners that forest practices are being conducted in accordance with FRPA. Recognizing that forest certification involves some processes and objectives similar to the Board's, the

[1] A number of international organizations have established unique programs, including standards of practice, to certify and monitor forest industry performance in the area of forest sustainability and environmental protection. These organizations include Canadian Standards Association (CSA), Forestry Stewardship Council (FSC), International Organization for Standardization (ISO 14001), and the Sustainable Forestry Initiative (SFI).

Board's approach, where feasible, is to use work undertaken by companies under the various Certification programs (Certification generally includes an option for companies to voluntarily undergo third-party verification audits providing the opportunity) to reduce the level of audit work associated with a Board compliance audit, while maintaining its high audit standards. Where warranted, the Board expects that its auditors can reduce the level of field testing on those licensees that are certified, thereby minimizing duplication of audit work performed while still serving the public interest.

Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code and FRPA based on criteria derived from the Code and FRPA and their related regulations. Audit criteria are established for the evaluation or measurement of each practice regulated by the Code and FRPA. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement

The standards and procedures for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board selects an audit and decides on its scope ('limited scope' or 'full scope') and/or area, the audit period and the staff and resources required to conduct the audit are determined. Board staff meet with the parties being audited to discuss logistics before commencing the work.

All activities carried out during the period subject to audit are identified (such as harvesting or replanting, and road construction or deactivation activities). Items that make up each forest activity are referred to as a 'population'. For example, all sites harvested form the 'timber harvesting population and all road sections constructed form the 'road construction population'.

The populations are then sub-divided based on factors such as site characteristics (like type or terrain yarding) and potential severity of the consequences of non-compliance on the sites. A separate sample is then selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

For each population, the auditors choose the most efficient means of obtaining information to conclude whether there is compliance with legislated requirements. For efficiencys, auditors usually rely upon sampling to obtain audit evidence, rather than inspecting all activities.

Audit field work includes air assessments using helicopters and ground procedures, such as measuring specific features like road or riparian reserve zone width. The audit teams generally spend one to two weeks in the field.

For audits of certified companies, in determining the level of field testing necessary, Board auditors examine, and perform tests of, a certified company's systems and procedures related to achieving Code and FRPA compliance, as well as the specific audit tests carried out by certification audit[illegible], if it is cost effective to do so. The auditors gain an understanding of the requirements of the applicable certification program, and any verification audit(s) undergone by the company in relation to legislated requirements. This entails visiting both the company and the company's external verification auditor offices to review and test certification systems and the audit(s) thereof. Field testing is then carried out, generally with smaller sample sizes than in audits of non-certified companies.

Thus, the Board's approach, rather than assume that all certification programs achieve the public interest, is to focus on an evaluation of the selected licensees' management controls to achieve compliance with legislated requirements, including an examination of the audit work conducted by the independent certification auditors in determining whether the licensee's procedures conformed with the required certification standards. This testing provides assurance that the certification audit work meets the Board's audit standards, and that a company's certification systems adequately address Code and FRPA requirements.

If, however, this testing determines that the rigour of the certification audit process is not sufficient, or that certification systems do not adequately address legislated requirements, then the licensee is audited by the Board in the same manner as licensees who are not certified.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code and FRPA is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board

Auditors collect, analyze, interpret and document information to determine the audit results. The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legislated requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance–where the auditor finds that practices meet Code and FRPA requirements.

Not significant non-compliance–where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance–where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is or has the potential to be significant, and is considered worthy of reporting.

Significant breach–where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests. .

Reporting

Based on the above evaluation, the auditor then prepares the audit report for submission to the Board. The party being audited is given a draft of the report before it is submitted to the Board so that the party is fully aware of the findings. The auditee is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow parties that may potentially be adversely affected to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally decide on written representations, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews the report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report, which includes the Board's conclusions and, if appropriate, recommendations.

If the Board's conclusions or recommendations result in newly adversely-affected parties or persons, additional offers of representations would be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.